

A Statewide Study of After-School Busing and Cost Estimates for Implementing After-School Busing on a Statewide Basis

Study Rationale

The issue of transporting children to and from after school programs was discussed by both the Governor’s Crime Commission’s Juvenile Delinquency Prevention and Intervention Committees during their retreat [September 1999] in Boone, North Carolina. As a result of these committee discussions, a request was made to the Criminal Justice Analysis Center to investigate this issue. Specifically, information was requested on the various modes of transportation for participants enrolled in after school programs. The question of using existing public school buses for the purpose of transporting students to and from after school programs was researched. Cost estimates were produced to determine how much funding would be necessary to provide transportation to and from after school programs on a statewide basis. For the purpose of this study, we define after school programs as programs that exist in elementary, middle, and high schools. These after school programs operate after normal school hours and involve various activities for participants such as academic tutoring, mentoring, and structured recreation.

Methodology

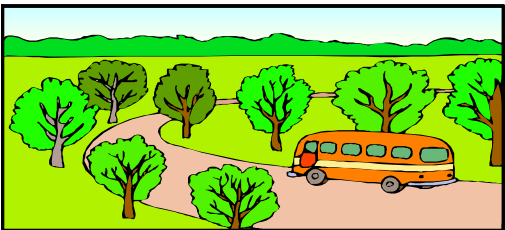
A sixteen-item telephone survey was developed and administered to public school transportation directors and community school coordinators. Questions were included to assess the nature and extent of after school programs in terms of the number of programs, number of program participants, how the students are transported and the actual costs associated with using the counties’ existing school buses.

The state’s 100 counties were divided into four quartiles, based on juvenile population. Each quartile consists of twenty-five counties. Ten counties were

randomly selected within each quartile. Out of the forty counties sampled, thirty-nine surveys were completed.

To obtain a cost estimate for each county surveyed, we multiplied the reported number of students participating in after school programs by the transportation cost per pupil within each respective county. For those counties not surveyed, we calculated an average number of after school program participants from those counties surveyed in each quartile, then multiplied that number by the transportation cost per pupil within each county not surveyed. After completing these calculations, we were able to come up with cost estimates for both those counties surveyed and average cost estimates for those counties not surveyed.

Two cost estimates were derived based on county busing data compiled by the state’s Department of Public Instruction (1999). The lower estimate assumes that all after school programs are held on campus. Thus, the costs as reported by DPI were divided in half since the students would only need to be bused home after the program each day. The upper estimate assumes that all after school programs are held off campus. Thus, the DPI costs, which are round trip figures, were multiplied by the number of after school program participants since they would need to be bused to and from the program each day.



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Survey Results
Statewide
Figure 1: Surveyed Counties (Shaded in blue)

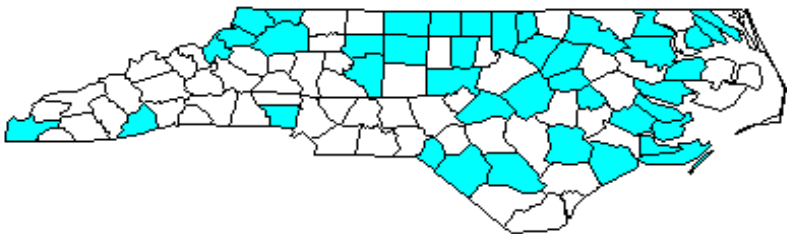


Figure 1 depicts all the counties surveyed, which gives one an idea of the distribution of the random sampling for this survey. Figures 2 through 8 represent the results from the survey administered to public school transportation directors and community school coordinators (n=78). The first set of questions asked respondents information pertaining to the number of after school programs located in their respective counties, the number of after-school programs located both on and off campus, and the number of students enrolled in the programs located both on and off campus. The second set of questions pertained specifically to transportation logistics. Figure 2 represents question 3, which asked respondents how many public schools within their respective counties have after-school programs. According to the figure, the mean number of after-school programs for the surveyed counties was 8. The highest reported number of schools that have after-school programs was 45, whereas, the lowest was 1.

Figure 2

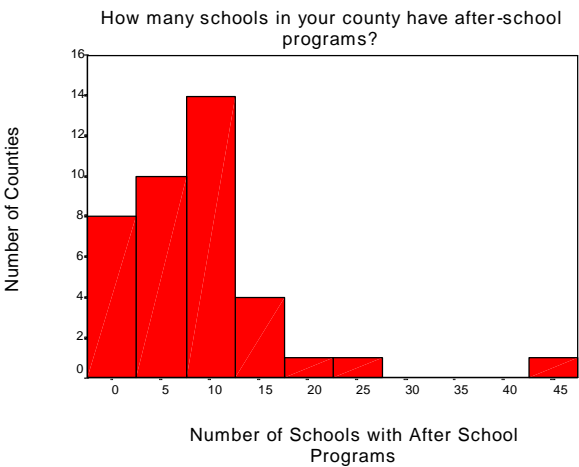
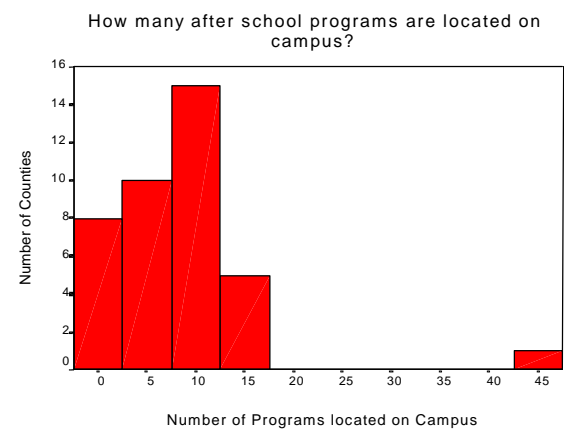


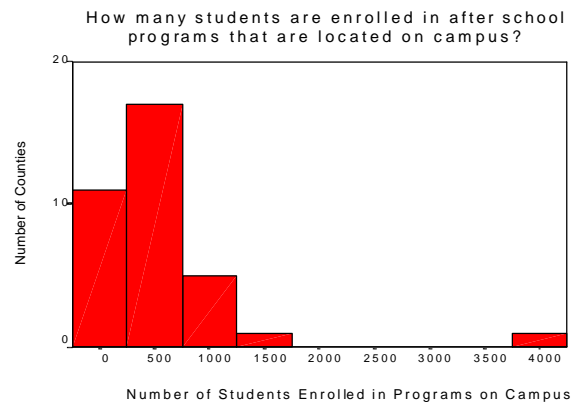
Figure 3 represents question 3a, which asked respondents how many after school programs were located on campus. According to the results, the mean number of after school programs located on campus was 8. However, only 16.7% (13) of the reported after school programs were located off campus. Figure 4 represents question #4, which asked respondents how many students were enrolled in the after-school programs located on campus.

Figure 3



According to Figure 4, the mean number of students enrolled in the reported after school programs located on campus was 519. The highest reported number of students enrolled in after-school programs on campus was 4000, whereas, the smallest number reported was 45. In contrast to these findings, only 117 students were reported as being enrolled in after school programs located off campus. Consequently, one could assume from these findings that the majority of the after-school programs exist on campus. The findings also lead to a second logical conclusion that the majority of students participating in after school programs attend those that are located on campus.

Figure 4



A second set of questions was asked that pertained specifically to transportation logistics. Figure 5 represents question #6, which asked respondents if the schools in their respective counties were currently transporting the students involved in after school programs. According to the results, 76% of

the respondents stated that school buses were the primary mode of transportation to and from after-school programs, whereas 23% reported that other means of transportation were used to transport children. These secondary modes of transportation include parents, contract transportation, and activity buses.

Figure 5

Is the school currently transporting the students involved in the after-school programs?	Number of Counties	Percent
Yes	30	76%
No	9	23%

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Respondents were also asked if the county incurred any costs for secondary modes of transportation. Although the question was not applicable to 71% of the respondents, 24% stated that the county did not incur the costs for secondary modes of transportation to and from after school programs. Figure 6 represents question #7, which asked respondents how many buses were their respective counties operating for after-school programs. The mean number of school buses used for after-school programs, according to the respondents, was 2. Five counties reported that they use 10 or more buses in their respective counties for after school program transportation.

Figure 6

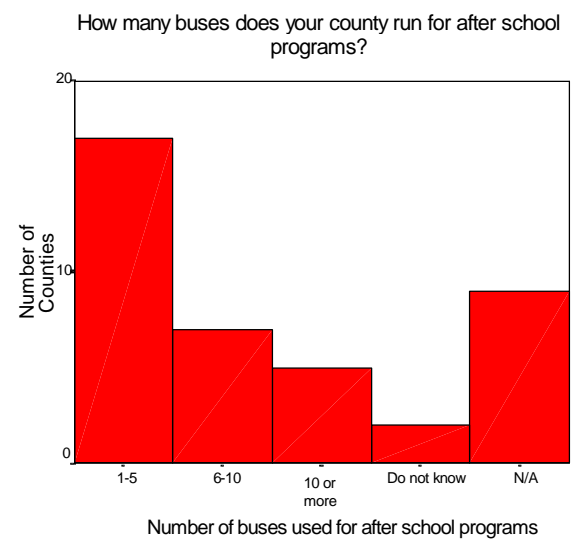


Figure 7: Results from Survey Question #8

On average, how many miles does each after-school bus cover per day?

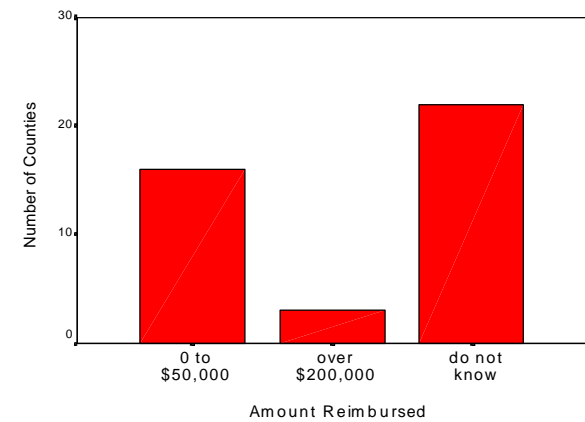
Average miles traveled a day	Number of Counties	Percent
0 to 20	7	18
21 to 40	12	31
41 to 60	4	10
61 to 80	2	5
81 or more	4	10
Do not know	2	5
N/A	8	21
Total	39	100

Figure 7 represents question #8, which asked the respondents on average how many miles does each bus travel a day to transport children from after-school programs. According to the figure, 18% of the respondents reported traveling between 0 to 20 miles a day; 31% reported traveling 21 to 40 miles a day; 10% reported traveling 41 to 60 miles a day; 5% reported traveling 61 to 80 miles a day; and 10% reported traveling over 81 miles a day. Finally, Figure 8 represents question #11, which asked the respondents

how much money was reimbursed back to the county for after school busing. According to the figure, 38% of the respondents reported between \$0 to \$50, 000 was reimbursed back to the county for after school busing. However, 54% of the respondents did not know how much money (if any) was reimbursed back to the county.

Figure 8

How much money is reimbursed back to the county for after school busing?



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Quartile Results

The next step in the analysis of the data was to divide the surveyed counties based on juvenile population into four quartiles. The juvenile population in Quartile 1, the most populous, ranged from 19,249 to 139,004 while Quartile 2 ranged from 9,461 to 18,978. In Quartile 3, the juvenile population ranged from 4,632 to 9,341, and finally in Quartile 4, the least populous, the juvenile population ranged from 1,328 to 4,360. Figure 9 represents the four quartiles along with the average results to questions #2, 3, 3a, 3b, 4, and 5 for each quartile.

Figure 9: Results of Quartiles

Quartile	Question #2 Average # of schools in each county	Question #3 Average # of schools with after school programs	Question #3a Average # of after school programs on campus	Question #3b Average # of after school programs off campus	Question #4 Average # of students enrolled in after school programs on campus	Question #5 Average # of students enrolled in after school programs off campus
One	42	15	13	1	439	12
Two	17	10	10	0	1013	0
Three	11	7	7	0	423	2
Four	5	3	3	0	280	0

Cost Estimates

The final step of this report was to prepare a cost estimate for transporting students to and from after-school programs in each quartile. The first step was to calculate a cost estimate for transporting students from after-school programs, which would be a one-way cost estimate. To calculate a one-way cost estimate, we multiplied the reported number of students participating in after-school programs for each county surveyed with the cost associated with one-way transportation as reported by DPI. However, for those counties not surveyed, we calculated an average number of after school program participants from those counties surveyed in each quartile, then multiplied that number by the costs associated with one-way transportation as reported by DPI.

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The second step was to calculate a cost estimate for transporting students to and from after-school programs, which would be a two-way cost estimate. To calculate a two-way cost estimate, we used a similar formula to the one above. We multiplied the reported number of students participating in after-school programs for each county surveyed with the cost associated with two-way transportation as reported by DPI. Similarly, for those counties not surveyed, we calculated an average number of after-school program participants from those counties surveyed in each quartile, then multiplied that number by the cost associated with two-way transportation as reported by DPI. According to these cost estimates, the total cost for the state to fund one-way transportation for after-school programs would be approximately 9 million. In contrast, the total cost of funding two-way transportation to and from after-school programs would be approximately 18.1 million.

Discussion

The purpose of this study was to evaluate the possibility of using school buses on a statewide basis as a form of transportation for students who participate in after school programs. From the study, it is obvious that public school systems across the state are making after-school programs available. The participation of juveniles in after-school programs ranged from 45 to 4,000 students with an average of 519 students participating in those programs located on campus. In contrast, respondents reported only 117 students enrolled in programs that operate off campus. Therefore, one can conclude that not only do a significant number of students participate in after-school programs; most of them participate in those programs located on campus. The results from this study also showed that over 75 percent of the respondents reported the use of county school buses as the primary form of transportation for after-school programs. However, Derek Graham, Section Chief of the North Carolina Department of Transportation, states counties that use school buses for the purpose of transporting students from after school programs are required to reimburse the state \$.35 per mile traveled. These funds, according to Graham, go towards the replacement and maintenance of school buses as well as the purchase of tires and fuel. Further, respondents reported on average that two buses were used for the purpose of transporting

students from after-school programs. Five counties reported that they use at least 10 or more school buses for the purpose of transporting students from after-school programs. Finally, the results of this study showed that the cost to transport students to and from after-school programs would be approximately 18.1 million, whereas, the total cost to transport students one-way from after-school programs would be approximately 9 million.

These cost estimates, according to Graham, may actually be lower than the actual cost to transport students to and from after school programs when bus routes are taken into consideration. According to Graham, the reported cost to transport a student is derived from bus routes. Bus routes are developed in a way that maximizes the capability to pick up as many students as possible. Bus routes to transport students to and from after school programs, on the other hand, are not based on such a concept. Therefore, the bus routes for after school programs may be longer than normal bus routes due to the fact that drivers may be required to drop off students who live in further proximity from one another. This would require drivers to cover routes that are more distant than normal bus routes, which will increase the actual transportation cost per student. Additionally, the reported cost per student does not cover eligible funds that are used by county school systems to supplement state allocated funds. Graham states school systems across the state use additional funds to supplement those obtained from the state.

These funds are considered by the state as eligible funds to cover the cost of hiring staff and drivers, purchasing fuel, etc. At the end of the year, eligible funds per county are taken into consideration by the state for the following year's allocated transportation budget for each county. Therefore, the exclusion of eligible funds in the reported cost to transport a student may have an affect on the cost estimates derived in this study.

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Conclusion

Previous studies have found that after school programs have the potential to deter juvenile delinquency. After school programs also have the potential to increase students’ academic productivity. However, students and communities will fail to reap such benefits if there is inadequate transportation for students who participate in after school programs. Therefore, several options should be considered to fund transportation for existing after school programs. Among several options, allocating part of the school transportation budget specifically for the purpose of after school programs should be a consideration. Other options include: Increasing DPI’s funding for the purpose of after school program transportation, obtaining state grants, obtaining congressional appropriations, or obtaining a modest surcharge from the parents of children who participate in after school programs.

Regardless of the cost, the importance of transporting students to and from after school programs cannot be overstated. With the increase of two-parent working families, many juveniles are left alone at home unsupervised after normal school hours. Without constructive activities, the opportunity for juveniles to get involved in delinquent activities increases dramatically. This is where the importance of after-school programs comes into play. After-school programs provide students the opportunity to build good study habits that he or she can carry with them through school. Adequate transportation for juveniles to and from after-school programs becomes a key link to such benefits. However, if a school offers an after-school program but insufficient transportation exists, the program becomes a failure. Therefore, transportation to and from after school programs should be a major priority for the state.

References

North Carolina Department of Public Instruction (1999). Statistical Profile. Raleigh, North Carolina.

Graham, D. (1999, November). Personal interview.

Prepared by
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“Our school is providing transportation for kids that would have no way home from after-school programs.”
Camden County

“We have eight schools that maintain after-school programs with 450 students enrolled.”
Scotland County

“We have no alternatives that would be more cost effective for transporting children in after-school programs.”
Rockingham County

(See tables with cost per county on pages 9 and 10).

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SYSTEMSTATS

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The Governor’s Crime Commission was established in 1977 by the North Carolina General Assembly under G.S. 143B-479. Its primary duty is “to be the chief advisory body to the Governor and the Secretary of the Department of Crime Control and Public Safety for the development and implementation of criminal justice policy.” The Crime Commission is always open to comments and suggestions from the general public as well as criminal justice officials. Please contact us and let us know your thoughts and feelings on the information contained in this publication or on any other criminal justice issue of concern to you.			
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Quartiles	Case	County	Juvenile Pop.	Total # of schools	Avg. # of pupils in after school programs	Cost per student 2 way	Cost per student 1 way	Total Cost 2 way (# of students * full cost)	Total Cost 1 way (# of students * .5 cost)
Top	1	Mecklenburg	139004	134	351	\$ 512.06	\$ 256.03	\$ 179,733.06	\$ 89,866.53
	2	Wake	122609	106	351	\$ 433.20	\$ 216.60	\$ 152,053.20	\$ 76,026.60
	3	Guilford	79184	95	95	\$ 434.96	\$ 217.48	\$ 41,321.20	\$ 20,660.60
	4	Cumberland	76859	76	351	\$ 254.92	\$ 127.46	\$ 89,476.92	\$ 44,738.46
	5	Forsyth	61409	61	450	\$ 481.39	\$ 240.70	\$ 216,625.50	\$ 108,312.75
	6	Durham	43695	44	351	\$ 496.57	\$ 248.29	\$ 174,296.07	\$ 87,148.04
	7	Gaston	40846	54	351	\$ 346.29	\$ 173.15	\$ 121,547.79	\$ 60,773.90
	8	Buncombe	37819	36	351	\$ 298.86	\$ 149.43	\$ 104,899.86	\$ 52,449.93
	9	Onslow	36997	31	285	\$ 300.97	\$ 150.49	\$ 85,776.45	\$ 42,888.23
	10	Johnston	31667	28	332	\$ 329.70	\$ 164.85	\$ 109,460.40	\$ 54,730.20
	11	Robeson	29847	41	351	\$ 263.86	\$ 131.93	\$ 92,614.86	\$ 46,307.43
	12	Davidson	29780	26	400	\$ 358.12	\$ 179.06	\$ 143,248.00	\$ 71,624.00
	13	New Hanover	29029	32	351	\$ 398.89	\$ 199.45	\$ 140,010.39	\$ 70,005.20
	14	Pitt	27883	31	351	\$ 373.52	\$ 186.76	\$ 131,105.52	\$ 65,552.76
	15	Catawba	27100	23	351	\$ 211.76	\$ 105.88	\$ 74,327.76	\$ 37,163.88
	16	Randolph	26514	24	351	\$ 444.06	\$ 222.03	\$ 155,865.06	\$ 77,932.53
	17	Rowan	26433	29	351	\$ 346.66	\$ 173.33	\$ 121,677.66	\$ 60,838.83
	18	Union	25962	33	351	\$ 394.59	\$ 197.30	\$ 138,501.09	\$ 69,250.55
	19	Wayne	25407	28	351	\$ 311.64	\$ 155.82	\$ 109,385.64	\$ 54,692.82
	20	Cabarrus	25364	22	351	\$ 312.84	\$ 156.42	\$ 109,806.84	\$ 54,903.42
	21	Alamance	24433	31	351	\$ 278.59	\$ 139.30	\$ 97,785.09	\$ 48,892.55
	22	Iredell	23441	30	351	\$ 300.57	\$ 150.29	\$ 105,500.07	\$ 52,750.04
	23	Craven	20354	22	280	\$ 321.41	\$ 160.71	\$ 89,994.80	\$ 44,997.40
	24	Cleveland	19665	11	351	\$ 311.78	\$ 155.89	\$ 109,434.78	\$ 54,717.39
	25	Nash	19249	28	425	\$ 331.33	\$ 165.67	\$ 140,815.25	\$ 70,407.63
Average			42022	43.04	341.57	\$ 353.94	\$ 176.97		
Quartiles	Case	County	Juvenile Pop.	Total # of schools	Avg. # of pupils in after school programs	Cost per student 2 way	Cost per student 1 way	Total Cost 2 way (# of students * full cost)	Total Cost 1 way (# of students * .5 cost)
Upper Middle	1	Orange	18978	9	1400	\$ 581.50	\$ 290.75	\$ 814,100.00	\$ 407,050.00
	2	Harnett	18662	23	1012.63	\$ 270.43	\$ 135.22	\$ 273,845.53	\$ 136,922.77
	3	Rockingham	18518	25	4000	\$ 374.33	\$ 187.17	\$ 1,497,320.00	\$ 748,660.00
	4	Burke	17095	23	1012.63	\$ 293.09	\$ 146.55	\$ 296,791.73	\$ 148,395.86
	5	Wilson	15669	23	520	\$ 309.53	\$ 154.77	\$ 160,955.60	\$ 80,477.80
	6	Caldwell	15407	23	1012.63	\$ 255.63	\$ 127.82	\$ 258,858.61	\$ 129,429.30
	7	Edgecombe	14078	14	1012.63	\$ 305.51	\$ 152.76	\$ 309,368.59	\$ 154,684.30
	8	Henderson	13880	20	1012.63	\$ 412.42	\$ 206.21	\$ 417,628.86	\$ 208,814.43
	9	Halifax	13552	15	1012.63	\$ 377.86	\$ 188.93	\$ 382,632.37	\$ 191,316.19
	10	Moore	13545	21	1012.63	\$ 413.49	\$ 206.75	\$ 418,712.38	\$ 209,356.19
	11	Lenoir	13197	19	1012.63	\$ 348.60	\$ 174.30	\$ 353,002.82	\$ 176,501.41
	12	Surry	13192	16	1012.63	\$ 321.41	\$ 160.71	\$ 325,469.41	\$ 162,734.70
	13	Rutherford	12718	21	1012.63	\$ 374.72	\$ 187.36	\$ 379,452.71	\$ 189,726.36
	14	Lincoln	12673	17	1012.63	\$ 349.03	\$ 174.52	\$ 353,438.25	\$ 176,719.12
	15	Brunswick	12526	14	1012.63	\$ 387.70	\$ 193.85	\$ 392,596.65	\$ 196,298.33
	16	Stanly	12376	19	1012.63	\$ 353.73	\$ 176.87	\$ 358,197.61	\$ 179,098.80
	17	Wilkes	12303	22	800	\$ 394.35	\$ 197.18	\$ 315,480.00	\$ 157,740.00
	18	Columbus	11730	19	1012.63	\$ 329.54	\$ 164.77	\$ 333,702.09	\$ 166,851.05
	19	Sampson	11634	15	1012.63	\$ 473.15	\$ 236.58	\$ 479,125.88	\$ 239,562.94
	20	Lee	11073	12	1012.63	\$ 303.20	\$ 151.60	\$ 307,029.42	\$ 153,514.71
	21	Carteret	10932	16	300	\$ 319.98	\$ 159.99	\$ 95,994.00	\$ 47,997.00
	22	Richmond	10640	17	1012.63	\$ 345.84	\$ 172.92	\$ 350,207.96	\$ 175,103.98
	23	Duplin	10160	15	250	\$ 397.88	\$ 198.94	\$ 99,470.00	\$ 49,735.00
	24	Vance	9838	15	379	\$ 323.38	\$ 161.69	\$ 122,561.02	\$ 61,280.51
	25	Franklin	9461	12	452	\$ 415.20	\$ 207.60	\$ 187,670.40	\$ 93,835.20
Average			13353.48	17.8	1012.63	\$ 361.26	\$ 180.63		

